WILMINGTON INSTITUTE MAY 1936 FREE LIBRARY

DELAWARE STATE MEDICAL JOURNAL

Official Organ of the Medical Society of Delaware

INCORPORATED 1789

VOLUME VIII
NUMBER 5

MAY, 1936

Per Year $2.00
Per Copy 20c

CONTENTS

POST-OPERATIVE COMPLICATIONS, WITH SPECIAL REFERENCE TO WATER AND CHEMICAL BALANCE, *Damon B. Pfeifer*, M. D., Philadelphia, Pa. .. 73

CANCER OF THE LARYNX, DIAGNOSIS AND SURGICAL CURE, *Gabriel Tucker*, M. D., Philadelphia, Pa. 80

WOMAN'S AUXILIARY: A. M. A. 82

DELAWARE ACADEMY OF MEDICINE 83

EDITORIAL 85

MISCELLANEOUS 87

OBITUARY 90

BOOK REVIEWS 91

Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Business and Editorial offices, 1022 Du Pont Bldg., Wilmington, Delaware. Issued monthly.

Copyright, 1936, by the Medical Society of Delaware.

Loose Stools in Infants

require extra diapering, and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

If you have a large incidence of loose stools in your pediatric practice—

TRY CHANGING TO A DEXTRI-MALTOSE FORMULA

When requesting samples of Dextri-Maltose please enclose professional card to cooperate in preventing their reaching unauthorized persons.
Mead Johnson & Company, Evansville, Indiana, U.S.A.

"Past Regrets and Future Fears"

In addition to difficulty in putting away the cares and worries of "dead yesterday" and "unborn tomorrow" some of your sleepless patients have the additional hurdle of fear. Fear—engendered by recollection of other sleepless nights—that sleep, so much needed, will again elude them; fear that continued loss of sleep will break down health.

Insomnia, whatever its cause, may easily become chronic, and establishment of normal sleep habits frequently requires temporary use of a hypnotic.

Ortal Sodium is effective—one five-grain capsule will usually induce quiet, restful sleep (a three-grain capsule is often sufficient). Its effect is not unduly prolonged; the patient is usually alert and refreshed the following morning.

Ortal Sodium (sodium hexyl-ethyl barbiturate) is supplied in capsules of 3/4, 3, and 5 grains, in bottles of 25, 100, and 500.

★

PARKE, DAVIS & COMPANY

CANNED FOODS AND THE PUBLIC HEALTH

IV. BOTULISM

• Several of our readers have inquired as to the possibility of botulism resulting from the consumption of commercially canned foods. The canning industry is proud of the part it has played in the eradication from its products of this deadly type of food intoxication. We are glad to devote this space to a discussion of this important topic.

During recent years, the daily press periodically carries reports relating how one or more members of a family, or of a group of persons, were stricken after a meal, usually with fatal results. Sometimes these accounts describe how an "anti-toxin" was rushed to the scene—an indication that botulism was involved. These press reports often include the statement that a "canned food" was incriminated as the cause of the illness.

We wish to emphasize that as far as the records go, these outbreaks without exception are not attributed to foods commercially canned in this country. In practically every instance, it was found that the foods —usually of a non-acid or semi-acid nature —had been preserved at home by the use of inadequate heat sterilization processes (1). These press reports, by not stating correctly the type of food involved, have done much to cast unwarranted suspicion on commercially canned foods as possible causes of botulism.

Botulism, or acute toxemia due to clostridium botulinum, is by no means a new affliction. As early as 1802—ninety-five years before van Ermengem discovered the true cause of the intoxication—warnings were issued against botulism. However, not until severe outbreaks occurred in this country some fifteen years ago, was it realized that cognizance should be taken of the fact that foods canned by the methods used in those days could become contaminated with the toxin of this organism. This fact having been realized, the canning industry took immediate steps to prevent such contamination of their products.

Research was inaugurated and has been continued to which the industry has contributed not only financially, but also by the studies of scientists associated directly with the canning industry (2). The end result of these researches was the development of scientific methods of determination of heat sterilization treatments, or heat processes as they are known to the industry, which would be adequate to insure the safety of canned foods from the standpoint of botulism (3).

The effectiveness of the measures generally adopted by the canning industry of the United States is evidenced by the fact that no case of botulism attributable to an American commercially canned food has occurred during the past ten years (1a). Foods packed in commercial canneries are heat processed not only to insure protection from bacterial spoilage causing merely the loss of the food, but to render them safe from the standpoint of botulism, as well. In fact, a sterilizing process sufficient to insure the destruction of the most heat resistant strain of Cl. botulinum ever isolated is considered the minimum requirement of heat treatment of commercially canned foods. The National Canners Association has issued lists of scientifically determined processes for non-acid canned foods with which canners comply (4).

Such are the facts. The American canning industry offers its products to the consuming public for what they are; namely, wholesome and nutritious foods.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

1. a) *1935* Amer. J. Public Health, 25, 301
b) *1935* J. Amer. Diet. Assn. 11, 18

2. *1936* J. Bacteriology 31, No. 1 P. 71
1923 Amer. J. Public Health, 13, 108
1923 J. Inf. Dis. 31, 650

3. *1923* Natl. Res. Council Bulletin, 7, No. 37

4. *1931* N.C. A. Bulletin 26-L, Revised

This is the twelfth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

ACCEPTED AMERICAN MEDICAL ASS'N Committee on Foods

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Association.

Behind

MERCUROCHROME

(dibrom-oxymercuri-fluorescein-sodium)

H W & D

is a background of

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association

A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent to physicians on request.

Hynson, Westcott & Dunning, Inc.

BALTIMORE, MARYLAND

IN THE WILMINGTON

MEDICAL ARTS BUILDING—

Professional Offices

INCLUDE

Heat
Light
Current
Hot Water
Gas
Compressed Air
Janitor Service

SUITES AS LOW AS $40.52 PER MONTH

EMMETT S. HICKMAN

RENTAL AGENT

203 W. 9th St. - - - Phone 8535

SOUND ADVICE

MILLIONS smoke cigarettes apparently without harm. In a small minority of cases, smokers with sensitive throats are affected by the irritant properties of smoke. Physician's advice to stop smoking, at least temporarily, is too often not obeyed. The next best advice is, try Philip Morris—the only cigarette *proved* less irritating.★

Even normal conditions suggest smoking a cigarette known to be milder and less likely to cause disturbance of the mucous membrane.

In Philip Morris cigarettes only diethylene glycol (instead of glycerine) is used as the hygroscopic agent.

★ *Laryngoscope 1935 XLV, 149-154*
Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
N. Y. State Jour. Med. 1935, 35—No. 11,590

Philip Morris & Co. Ltd. Inc. **Fifth Ave., N.Y.**

PHILIP MORRIS & CO. LTD. INC.
119 FIFTH AVENUE NEW YORK

Absolutely without charge or obligation of any kind, please mail to me

★ Reprint of papers from N. Y. State Jour. Med. 1935, 35—No. 11,590; Laryngoscope 1935 XLV, 149-154. Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245. ☐

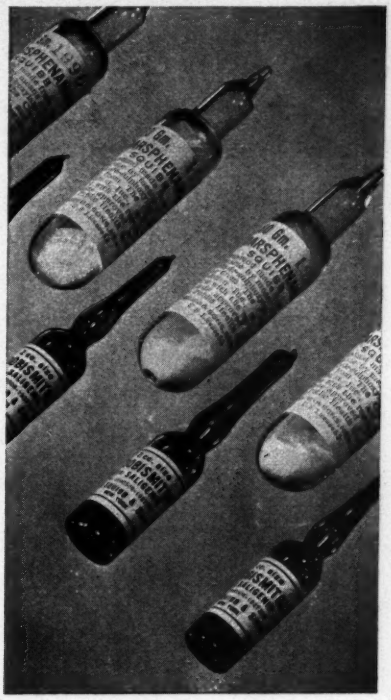
For my personal use, 2 packages of Philip Morris Cigarettes, English Blend. ☐

SIGNED: _____

ADDRESS _____

CITY _____ STATE _____

13,198 cases of syphilis



IN A RECENT REPORT* dealing with the results of treatment in 13,198 patients with early syphilis, the value of persistent and continuous treatment is stressed. A minimum of from 12 to 18 months of continuously applied treatment with alternate courses of an arsphenamine and a heavy metal was found to produce by far the most favorable results.

Iodobismitol with Saligenin is a propylene glycol solution containing 6 per cent sodium iodobismuthite, 12 per cent sodium iodide and 4 per cent saligenin. It presents bismuth in anionic (electro-negative) form. Iodobismitol with Saligenin has been shown by clinical trials and experiments to be rapidly and completely absorbed and slowly excreted, thus providing a relatively prolonged bismuth effect. Its content of 4 per cent saligenin—a local anesthetic agent—is an additional advantage. Repeated injections are well tolerated in both early and late syphilis.

Neoarsphenamine Squibb is readily and rapidly soluble and possesses uniformly high spirocheticidal power and low toxicity. Arsphenamine and Sulpharsphenamine are also available under the Squibb label.

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

For literature write the
Professional Service Dept.
745 Fifth Avenue
New York City

*Martenstein, H.: Syhilis Treatment: Enquiry in Five Countries, *League of Nations Quart. Bull. Health Organ*, 4: 129, 1935.

Making the First Formula Agree with the Baby

NEWBORNS require breast milk. Deprived of human milk, their nutritional requirements are met by simple mixtures of cow's milk, sugar and water. The milk may be fresh, evaporated, dried, sweet or sour; the sugar simple or mixed.

Whole milk formulas are suitable for most newborns with good digestive capacities. The amount of whole milk given should approximate ⅔ of the total required calories. And the remainder (one-third) should be in added Karo. Water is added to the mixture for the fluid intake to be about 2½ ounces per pound of baby weight per day.

Evaporated milk formulas are indicated for newborns with limited digestive capacities. They may be used to advantage in considerably higher concentrations than whole milk for premature, feeble and debilitated infants.

The added Karo is again one-third of the total required calories.

Dried milk formulas are suitable for allergic infants who will take only small volumes at a feeding and babies of allergic parents. Formulas approximately equivalent to whole milk may be made up with water and Karo added in the same ratio as in whole milk mixtures.

Acid milk formulas are of particular value for babies with low digestive capacities requiring large food requirements. Acid milk requires no dilution with water.

FORMULAS FOR THE NEWBORN

3 Ounces; 6 Feedings

Whole Milk	10 ounces
Boiled Milk	10 ounces
Karo	2 tablespoons
Evaporated Milk	6 ounces
Boiled Water	12 ounces
Karo	2 tablespoons
Powdered Milk	5 tablespoons
Boiled Water	20 ounces
Karo	2 tablespoons
Lactic Acid Milk	12 ounces
Boiled Water	8 ounces
Karo	2 tablespoons

REFERENCES:

Kugelmass, Clinical Nutrition in Infancy and Childhood, Lippincott.
Marriott, Infant Nutrition, Mosby.
McLean & Fales, Scientific Feeding in Infancy, Lea & Febiger.

The amount of Karo required may be added directly to the total volume of acid milk prescribed. Karo is an excellent milk modifier of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) for both the baby and the budget.

Corn Products Consulting Service for Physicians is available for further clinical information regarding Karo. Please Address: Corn Products Sales Company, Dept. SJ-5, 17 Battery Pl., New York City

in the treatment of

syphilis..

chemotherapeutic agents of the highest quality available should be employed. Merck & Co. Inc. has attained an enviable reputation as a manufacturer of fine chemicals through many years of service to the medical profession.

ARSPHENAMINE MERCK ★ NEO-ARSPHENAMINE MERCK

SULPHARSPHENAMINE MERCK ★ BISMOSOL

TRYPARSAMIDE MERCK
(for neurosyphilis)

Literature on any one or all of these products may be obtained from

MERCK & CO. Inc. Manufacturing Chemists RAHWAY, N. J.

THE LAUREL SANITARIUM

WASHINGTON BOULEVARD MIDWAY BETWEEN BALTIMORE AND WASHINGTON

LAUREL, MARYLAND

AEROPLANE VIEW 163 ACRES ESTABLISHED 1905

NERVOUS AND MENTAL CASES
ALCOHOLIC AND DRUG HABITS

INDIVIDUAL TREATMENT
AMPLE FACILITIES

PHONE LAUREL 125 JESSE C. COGGINS, MEDICAL DIRECTOR

PREFERRED!

●Farina is a preferred cereal because it combines high food-energy content with exceptional digestibility.

PILLSBURY'S Farina is preferred because the Pillsbury name is an assurance of highest quality and uniformity.

PILLSBURY'S FARINA
Creamy hearts of choicest wheat

The Belle Mead, New Jersey, Sanatorium

Long Established and Licensed

For Nervous and Mental Diseases, Alcoholic, Drug Addicts, Invalidism, Elderly People, and Selected Cases of Epilepsy

Accessible to Delaware by auto and railway. At the foot of Watchung Mountains. Five-hundred-acre stock farm. Hydrotherapy, Physio-therapy. Efficient, trained medical and nursing staff. Farm garden and outdoor and indoor occupational methods of treatment. Arts and crafts shop.

Suitable relaxation and diversion, scientific treatment.

RATES VERY REASONABLE for excellent accommodations. For further information apply to JNO. CRAMER KINDRED, M. D., Consultant, Belle Mead, N. J. Phone Belle Mead 21. On the registered A. M. A. Hospital List.

JNO. JOS. KINDRED, M.D.,
(founder and consultant)

The VEIL MATERNITY HOSPITAL

WEST CHESTER, PENNA.

Strictly private, absolutely ethical. Patients accepted at any time during gestation. Open to Regular Practitioners. Early entrance advisable.

Rates Reasonable

See P. V. 1.

For Care and Protection of the Better Class Unfortunate Young Women

Located on the Interurban and Penna. R. R. Twenty miles southwest of Philadelphia.

Write for booklet

THE VEIL
WEST CHESTER, PENNA.

N. B. DANFORTH, Inc.

WHOLESALE DRUGGIST

Agents for all the

Principal Biological, Pharmaceutical and General Hospital Supplies

Full and Fresh Stock Always on Hand

We Feature CAMP Belts

. . fitted by a graduate of the Camp school

Expert Fitters of Trusses

Oxygen Also Supplied

SECOND AND MARKET STREETS

WILMINGTON, DELAWARE

ELI LILLY AND COMPANY

FOUNDED *1876*

Makers of Medicinal Products

AMYTAL

(Iso-amyl Ethyl Barbituric Acid, Lilly)

Supplies the relaxation and sleep which are essential to rapid convalescence of medical and surgical patients. Upon awakening the head is clear; there is no after depression; energy and self-confidence are restored.

'Amytal' (Iso-amyl Ethyl Barbituric Acid, Lilly) is supplied in 1/8-grain, 1/4-grain, 3/4-grain, and 1 1/2-grain tablets in bottles of 40 and 500.

Prompt Attention Given to Professional Inquiries

PRINCIPAL OFFICES AND LABORATORIES, INDIANAPOLIS, INDIANA, U. S. A.

DELAWARE STATE MEDICAL JOURNAL

Owned and Published by the Medical Society of Delaware

Issued Monthly Under the Supervision of the Publication Committee

Volume VIII
Number 5

MAY, 1936

Per Year $2.00
Per Copy 20c

POST-OPERATIVE COMPLICATIONS, WITH SPECIAL REFERENCE TO WATER AND CHEMICAL BALANCE*

DAMON B. PFEIFFER, M. D.**

Philadelphia, Pa.

The great French physiologist Claude Bernard once remarked that maintenance of fixed conditions within the body is the prime requisite for continuation of the processes of life. Crile has vividly stated that life is held in suspension in water. So true is this that no vital processes with which we are acquainted can go on without a minimum of water. It follows that there is an optimum demand for water on the part of every vital activity. Furthermore, a certain composition and concentration of the chemical elements of vital processes must be present if fixed interior conditions necessary to life are to be maintained. It is not to be wondered at, therefore, that in the evolution of all living things nature has provided automatic safeguards. Our thirst, appetites, habits and functions have been phylogenetically schooled in such a manner that under ordinary conditions of health and living this fixity is kept without our planning for it. Indeed too much planning, as in the case of the health and diet faddist, is only too likely to upset the balance. It is in the extraordinary conditions of privation, hardship or in disease that it becomes necessary to inquire into the fundamentals of the matter, to recognize deviations of importance and intelligently to apply our knowledge.

It is very easy to overlook or underestimate the simple and the obvious, and it is astonishing how long it has taken to appreciate the importance of water metabolism and to acquire exact data upon the subject. Even now our knowledge is scanty, but there is no longer excuse for failing to recognize or, better, to prevent dehydration. There are two normal sources of water for bodily use: first the exogenous, or the water which is taken in by mouth in the form of food and drink. The ordinary diet contains approximately 80% of water. The usual house diet may thus yield as much as a litre of water and the restricted diets proportionately less. Naturally, in the postoperative period the intake in this form frequently shrinks to little or nothing. Similarly water as such or in other fluid mixtures during this period is usually scanty, or if given by mouth may fail of absorption in the stomach or indeed may initiate hypersecretion into the stomach, thus serving to deplete rather than to replace blood and tissue requirements.

The second general source of water is the endogenous. This comprises the preformed water in tissues which may be released by oxidation of body cells and thus liberated for general use. In fever and starvation this may be as much as two to three hundred cubic centimeters daily, but is usually less and is of little clinical importance. The second portion of endogenous water is derived from the oxidation of food products. Proteins, fats, and carbohydrates when broken down yield varying amounts of water but the total, even on a liberal diet, rarely exceeds four hundred cubic centimeters, and as intake falls or digestive activities are damaged it falls proportionately. A considerable amount of the water in the body is present in the form of a revolving fund and is absorbed and used over and over again. The secretions of the salivary glands, stomach, liver and pancreas may total two or more litres a day but they are carried down in the intestinal tract and the water is

*Read before the Medical Society of Delaware, Wilmington, October 8, 1935.

**Associate Professor of Surgery, Graduate School of Medicine, University of Pennsylvania.

largely abstracted before ejection of the solids.

To estimate our needs for the purpose of maintaining a balance it is essential to know the avenues and the amount of losses and the proper allowance for loss that is essential to function. We are apt to think of urine as the chief avenue of loss of water. It may probably be regarded as the most important fluid loss because of its action in carrying off waste products and serving automatically as a chemical regulator, but it is often not the greatest loss. This occurs normally through the lungs and skin. The insensible perspiration and evaporation from the lungs amount to 1000 to 1500 c. c. under average conditions, and in hyperpnoea and when perspiration is profuse the loss may be greatly increased. I shall show you a case in which profuse perspiration nearly resulted fatally.

The urine must be considered not only from the standpoint of mere loss of water to the body but as an organ also to be supplied with water in order to perform its necessary functions. The normal excretion of solids daily in the urine averages from thirty-five to forty grams. Fifteen grams of water are required to carry off each gram of solids. Assuming therefore a normal concentrating ability of the kidney, at least 600 c. c. of urine must be passed daily in order to clear the body of its waste products. This is approximately 20 ounces which the old rule of thumb prescribed as the minimum satisfactory amount of urine excretion after operation. But in fevers and toxic processes the amount of waste may be greatly increased and also the concentrating capacity of the kidney may be more or less diminished by the acute process itself or by the previous existence of chronic degenerative disease. It is necessary, therefore, to estimate carefully the individual requirements, bearing in mind the probable wastes requiring elimination and the actual performance of the patient as evidenced by the amount and specific gravity of the output. While in quiet states the minimum of 500 or 600 c. c. may be tolerated, in acute conditions one should aim at a much larger output. Probably one should not be satisfied with less than 1500 c. c. daily, with a specific gravity of not more than 1015. If time permits, a previous estimation of the concentrating power of the kidney is of prognostic importance and helpful in postoperative treatment. The Rosenthal test and the urea concentration test are available in this connection.

The water lost in feces normally is small, amounting to not more than 250 c. c., but in enteritis and diarrhea it may be large. Also in the postoperative period, particularly after abdominal operations even when there is no discharge from the bowels, there is frequently paralytic ileus with a large accumulation of fluid in the stomach and intestines, containing water that is to all intents and purposes lost to the body at the time. While not strictly germane to the subject under discussion, it may also be proper to remark that the distribution of the blood and the accumulation of tissue fluids outside of the vessels in traumatized areas not only play an important role in shock, as shown by Blalock and others, but have an important effect upon water metabolism in other important areas of the body and require compensation. Finally, in our calculations must appear losses by vomiting, from fistulas, and from various kinds of drainage, as for instance from tubes in the common ducts, which discharge bile that is almost entirely water. Remember further that most patients are deprived of water in preparation for anesthesia so that there may already be a deficiency.

Considered alongside the various necessary and incidental losses of water, the possible amount of endogenous water available to the body is trivial and the automatic adjustment of the body to privation is extremely limited. It therefore becomes our task to know intakes and outputs in their various forms and to provide against depletion. This requires an accurate tally of supply and obvious losses. With this as a basis, the clinician must estimate the probable variations in loss in the individual patient.

Practically, therefore, the computation of water requirement of the postoperative patient for the first 24 hours is as follows:

(1)	The insensible loss..	1500 c. c.
(2)	Urine	1500 c. c.
	Total minimum	3000 c. c.

(3) Plus losses from gastrointestinal tract, bleeding, drainage and excessive perspiration.

The total requirement in the first 24 hours is rarely less than 3500 c. c. and may reach as high as 6000 or 7000 c. c. The amount necessary for subsequent days is similarly calculated, the total diminishing as a rule with improvement in the general condition.

The ways of administering these large amounts of fluid are now quite well understood and require only passing mention. Every surgeon of experience knows that in many, and particularly abdominal, cases the normal route by mouth is not only ineffective but dangerous in the early postoperative period. It was Murphy who clearly pointed out thirty years ago that water is absorbed chiefly in the colon and therefore it is irrational to pour water in at the mouth when conditions of intestinal paresis prevent its passage through 20 or 25 feet of intestines to the point of absorption. Add to this the ill effects of distention, stagnation, irritation and hypersecretion and we have the scene set for so-called acute dilatation of the stomach, which may in itself be fatal. It was Murphy who showed that water could be introduced into the colon by proctoclysis and absorbed in sufficient amounts to prevent dehydration under ordinary circumstances. Under his influence the use of constant proctoclysis or enteroclysis was brought to a high art. To a certain extent it is now a lost art. Its difficulties consist in the provision of sufficient fluid to keep absorption active without overdistending the bowel, which defeats its own purpose. This is accomplished best by regulating the height of the column of fluid at a level which is just sufficient to overcome intra-abdominal tension. Many of the older nurses were adepts, but the difficulties led to modifications such as the drop method or the intermittent plan of instillations. For many cases it is ample and ideal, but where accuracy is especially desirable it has been supplanted by subcutaneous or intravenous infusion, by which means a known amount of fluid is unerringly supplied to the patient. Furthermore, as we shall see, it is often desirable to supply chemical substances which cannot be absorbed by rectum but can be given in known quantities beneath the skin or into the veins.

The most important single consideration in the immediate postoperative period is water, and it is the one thing which our internes, unsupervised, are most likely to forget. I am accustomed to say to them "keep the stomach empty and the circulation full." A thorough understanding of quantitative fluid needs and how to supply them is of the first importance. It is of course possible to give too much fluid and to give it too rapidly, so that a weak or embarrassed circulation may be adversely affected. Unfortunately, there is as yet, so far as I know, no definite indicator of the optimum fluid content. The occurrence of oedema, of excessive bronchial secretion, of polyuria are signs and one should not too greatly exceed the actual computed requirements in any case. It still remains true, however, that the great defect and the great danger at the present time are in undersuppply rather than in oversupply of fluid.

A more recent development which is less known has to do with qualitative needs or the restoration of chemical balance disturbed by abnormal metabolism or by the loss of certain metabolites. This first appeared in surgical practice as a result of the concept of acidosis. Fevers, the excessive breakdown of tissues, infections in children, metabolic disturbances such as diabetes, renal insufficiency, prolonged general anesthesia all were shown to bring about increased hydrogen ion content of body fluids, and often acetone in the urine was used as an indicator, incorrectly as we know now. To combat the acid condition, an alkali such as sodium bicarbonate was added to the colonic infusion or at times given intravenously. The results were not altogether happy. Often cases did badly on this treatment and some even went into tetany. It was then recognized that chemical balance could be disturbed in the other direction, that alkalosis in fact was more important to the surgeon than acidosis, and the giving of alkaline substances therefore was not only unnecessary in many instances but positively dangerous. Time does not permit us to trace the development of our present knowledge but, briefly, it has become evident that the chemistry of the body may be unbalanced by either the loss

of basic or acid substances in excess as well as by the formation of abnormal acids in the body. Also the selective excretory capacity of the kidneys must be taken into account as influencing the accumulation of undesirable chemical products which must be neutralized or their excretion hastened by appropriate measures.

The most common and important base of the body from the present viewpoint is sodium; the most important acid is chlorine, and the most important salt is sodium chloride. Chlorine is easily lost in large quantities from the body in the form of hydrochloric acid by excessive vomiting or through gastric or duodenal fistulas. There ensues the condition known as alkalosis or, better, hypochloremia. This is readily detected by blood chemistry examination. The normal plasma chloride value is 600 mg. per 100 cc. When this falls it is at first compensated by the buffer substances of the body whose function it is to maintain a fixed reaction of the body fluids. Notably, for example, the carbonic acid present in weak combination with base is detached from its combination and employed to neutralize the base now present in excess due to loss of its natural balance, chlorine. This leads to a rise in CO_2 content in the blood, also readily recognized by laboratory methods. As chlorine is further lost the compensating mechanism becomes unable to maintain the balance and uncompensated alkalosis is established. Severe tissue damage now occurs, notably to the kidneys, whose excretion diminishes, casts and blood appear in the urine and the blood area nitrogen rises. It was thought for a time that this rise of blood urea was due to renal damage and many of these cases were thought to have died of uremia. Dr. Eiman and Dr. Karr in the Abington Memorial Hospital have shown that it is in reality a compensatory phenomenon by which the body retains a metabolite which under normal circumstances should be excreted but under the present conditions must be held to help maintain the osmotic pressure of the body fluids. If fluid and chemical balance be restored and the patient not already fatally damaged, the kidneys will again excrete the excess of urea and return to normal.

A case which illustrates a number of these points was encountered by the writer at the Presbyterian Hospital in Philadelphia in 1929. It has appeared in the *Annals of Surgery* of that year under the title "Alkalosis Simulating Chronic Nephritis," but in the light of our more recent knowledge it appears as a case of true hypochloremia, with the alkalosis and azotemia as secondary effects. Example: When I first saw the patient he was lying comatose and very nearly dead. He was about 41 years old, with a history of "stomach trouble" since 14 years of age. Of late his symptoms had included postprandial discomfort and sensation of fullness in the stomach. This was relieved by vomiting at first, but for many years this symptom had not been conspicuous. He had acquired the habit of emptying his overfilled stomach by a tube. He had been admitted to the hospital twice before, each time in a semi-stuporous state. On one of these admissions, about seven years previously, an x-ray diagnosis of gastroptosis was made. Each time, because of a high B. U. N. figure and stupor on admission, he had been diagnosed uremia and each time on supportive treatment he had improved and been discharged. On this occasion, however, he had not improved on these measures, and when I first saw him his B. U. N. was nearly 100, his urine was loaded with albumin and casts, and he was unconscious. Despite the high B. U. N. the man's blood pressure was only 108/68, and his clinical condition impressed me with its similarity to some cases of surgical alkalosis. I ordered a complete blood chemistry examination. This showed his B. U. N. to be 120, his CO_2 combining power to be 90, and his blood chlorides below 200. Salt was being withheld on account of the supposed nephritis. Forthwith, it was decided to make every effort to correct his blood chemistry. He was administered whole blood and salt solution by vein, on repeated occasions. Inside of 12 hours he was conscious, and finally after five days his blood chloride level was brought up to normal, with a result that his CO_2 came down to 55 and his B. U. N. rapidly approached normal. It was later found that he had a pyloric stenosis from an old healed peptic ulcer. His attacks always followed prolonged vomiting or self-administered gastric lavage. I was able to

perform a posterior gastroenterostomy, and he was discharged with his urine free of albumin and casts and his B. U. N. normal. Evidently, vomiting would cause the loss of such great quantities of HCl that a state of hypochloremia, with its resultant azotemia and alkalosis would occur, and the patient would go into coma. It shows how easily the syndrome of hypochloremia and azotemia may be mistaken for uremia.

Hypochloremia to some degree is frequently met with postoperatively. It may be foreseen in conditions associated with large loss of gastric and duodenal contents. The prolonged use of the Jutte or Levine tube to keep the stomach empty is of great value but is likely to produce hypochloremia which must be guarded against by liberal infusion of salt solution. If unrelieved, it frequently results fatally and the pathologist will not give you the cause of death. The blood chemistry examinations—chlorides, urea, and CO_2 will give you the diagnosis and also the necessary check by which the chemistry can be restored to normal. Frequent estimations, at least once a day, sometimes oftener in acute conditions, are desirable. In marked hypochloremia, hypertonic NaCl solution, 500 c. c. of 2% may be given.

Hyperchloremia may occur and is also serious. It is uncommon and we know less of its effects. It is most likely to occur in chronic renal disease, where the concentrating capacity of the kidney is impaired and excess salt is eliminated slowly. This can be prevented by care and blood chemistry estimations. Occasionally acid is found in excess in the plasma. This is usually due to retention of abnormal metabolic acids by a damaged kidney. It is indicated by a normal chlorine content, with a low CO_2. A useful means of neutralization is to administer a one-sixth molar solution of sodium lactate, which is isotonic, as recommended by Hartman. Similarly, deficient calcium can be detected and supplied, excessive creatinine is measurable and attention devoted to its elimination.

The value of infusion of glucose solutions has been widely recognized and needs little remark. Not only are they useful in combatting dehydration but they furnish energy in the most available form and thus aid the automatic agencies of the body in overcoming chemical imbalance of whatever nature. Blood transfusion must never be forgotten, as it is often the ideal fluid.

We have yet much to learn before we can lay claim to such a knowledge of the chemical reaction and composition of the blood and body fluids as to be able to assay, replace and balance at will, but enough is known to inspire the hope that we can now be more exact and definite in certain phases of therapy that only a short time ago were on an entirely empirical basis, and enough is known to assure you that lives can now be saved by the application of the more exact methods at present available.

By way of illustration I append brief notes and graphs illustrating the effects of dehydration and also one of hyperchloremia.

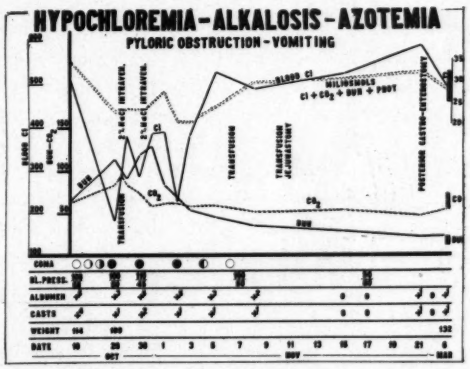


Figure 1. Hypochloremia

Showing the inverse relationship between the blood chlorides and the CO_2 and blood urea nitrogen. Dark circles indicate coma associated with extreme chemical imbalance and disturbance of osmotic pressure.

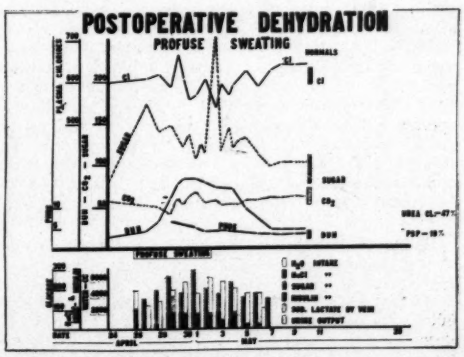


Figure 2. Effects of Dehydration

The patient was a man aged 71, who had been sick for many weeks with pain and tenderness in the

gall-bladder area and fluctuating fever and jaundice: a typical instance of cholecystitis with stones in the gall-bladder and common duct. Operation was cholecystectomy and choledochostomy. The man's condition was not good and the operation was difficult and fairly long. He was a mild diabetic as well. In first 24 hours he received about 4500 c. c. of fluid subcutaneously and intravenously. The urine output was only about 200 c. c. Sweating was extraordinarily profuse, drenching the bed several times a day. It is probable that the loss from this source was as much as 2000 c. c. in 24 hours. Unfortunately, through a change of internes and misunderstanding of orders, he received only a little over 2000 c. c. that day and the following day only 3000 c. c. Extreme dehydration resulted, with dry tongue, urine output down to about 100 c. c. daily, with rise in the blood urea nitrogen. He became irrational and the prognosis was grave. The situation was then appreciated and fluids stepped up 4500, then 5000, then 6000 c. c. daily. Sweating diminished, the urine output rose, his mental condition cleared and he went on to a satisfactory recovery. The acidosis due to retention of abnormal acids in this case was combatted by sodium lactate intravenously.

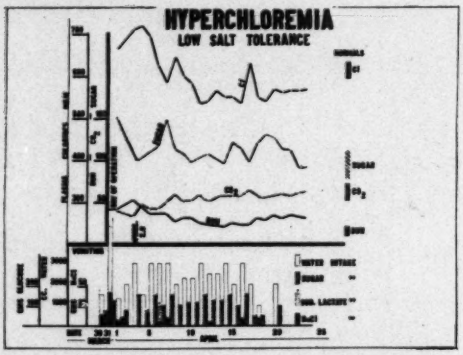


Figure 3. Hyperchloremia (Low Salt Tolerance)

I have had no personal case of hyperchloremia but have knowledge of several and we can state that it is dangerous and precautions must be taken to avoid it. The following case is from the urological service of my colleague, Dr. Alexander Randall in the Abington Hospital. A man aged 66 had suffered for 10 years with severe symptoms due to benign prostatic hypertrophy and ureteral calculus. Two unsuccessful attempts had been made to operate upon him elsewhere in 1931 and 1932, which were defeated in each instance by collapse under anesthesia. He had a weak myocardium, poor kidneys, a blood urea nitrogen of 37 to 47, and phenolphthalein excretion of zero. It seemed necessary, however, to take the operative hazard, and after preparation and still in precarious physical condition, operation was performed. The stone was removed from the ureter and a catheter drain placed in the pelvis of the pyonephrotic kidney. He survived and is now in greatly improved condition.

H. S., White Male: Age 66. **Chart:** This chart shows the difficulty which a damaged kidney has in getting rid of even small amounts of sodium chloride. Immediately after the operation he was given about 5000 c. c. of normal salt solution, and the next two days 1500 c. c. and 2000 c. c. of salt solution respectively, with the result that his plasma chloride level was pushed up to 710 (normal is 600). The next six days he was given no salt at all, his fluids being given as glucose solution. Thereafter he was given sodium chloride on four occasions, each time with a corresponding spike in his plasma chloride level. If this man had been given his fluids routinely as normal salt solution, with no regard to his plasma chloride level, an alarming and dangerous state of hyperchloremia would have certainly ensued, with death. On April 5th, because the CO_2 had been persistently on the low side of normal, as a result of the excess of chloride ions, the patient was given a liter of 1/6 molar sodium lactate, with a rise in the CO_2 from 48 to 58 vol. %. It is our opinion that blind after-treatment on clinical indications, without chemical check, would have failed to carry him through.

DISCUSSION

PRESIDENT NILES: You have all heard this most interesting paper. I would like to hear it discussed.

DR. O. S. ALLEN (Wilmington): I don't think Dr. Pfeiffer needs to apologize for bringing this subject to us. I don't believe he could have brought a subject to us that should interest the surgeon and medical man any more than the subject that he has presented, and furthermore, it seems to me to be one of the great fields both in surgery and medicine. It is true, I think, that the surgeons have awakened to the fact long before the medical men. The medical man hasn't been aroused, but I think now he is getting aroused.

Personally, I have been interested in it for three or four years, although I don't know very much about it yet. The chemistry of the body, and also the chemical death, as you brought out, and finding nothing at post-mortem, have been most interesting phenomena.

Another thing you mentioned was the salt free diet. Medicine goes in fads, or cycles. One fellow comes out with a new idea, and all the rest of us follow it along. A few years back we didn't give the patient any salt at all. I long ago discarded that idea. I followed it along the same as everybody else, probably, for quite a few years, and the only thing I ever saw it do was to weaken the patient. So for several years now I have never deprived the patient of the ordinary salt that goes in the food. It is true probably, as you say, that in a few cases too much salt will do harm, but the ordinary amount of salt, I personally do not think does any harm. I am not a kidney expert or anything like that, but in nephritis I have never seen any bad effects, although I can see that where you

have an acutely inflamed kidney you probably would not supply that patient with salt. But certainly, in the ordinary case of cardiovascular disease with nephritis, I don't see any objection at all to the patient having salt.

I want to thank you for bringing this subject to us for it is a most fascinating subject.

PRESIDENT NILES: Is there any further discussion?

DR. R. W. TOMLINSON (Wilmington): Since Dr. Pfeiffer has brought up this pertinent subject of balance of the blood chemistry, I would like to cite a case which Dr. Bird and I saw in consultation. The patient had had a primary operation for hemorrhoids, and some seven days subsequently he went into intractable vomiting and lost considerable chlorides. At the time of the initial inspection he had a CO_2 which was down to 35. We didn't get a blood chloride estimation but I felt at the time, and Dr. Bird concurred with me, that he probably had hypochloremia. The symptoms exhibited might not have been strictly in accordance with Hoyle, for while his tongue was like the mud flats of a stream when the tide has been out several hours and it has baked in the sun, it was very red and very dry. The question naturally involved was whether this was a case of acidosis per se or whether it was a case of hypochloremia alone. I wanted to ask you whether there is any incompetency of the exhibition of hypochloremia with a lowered CO_2 of 35. We administered sodium bicarbonate in dram doses every hour, and gave 1000 c. c. of 10 per cent saline and 10 per cent glucose. The vomiting was eradicated and the CO_2 came up to 65, with an amelioration of all symptoms. But I have been considerably puzzled about the signs as to the rightness or wrongness of the contemplated administration of CO_2, and the exhibition of salt with the sugar, and I would like to ask your opinion pertinent thereto.

PRESIDENT NILES: Is there any further discussion?

DR. ROBERT WARREN (Wilmington): As a pediatrician, I think probably we know as much about water balance, or see as many cases, at least, as the average man, and I want to say I have never heard (and I have had some good teachers in my day and I managed to go through all Dr. Hart's work) so able and practical a presentation as Dr. Pfeiffer has given us today.

There is one thing I think should be mentioned about the administration of soda bicarbonate in what you consider the presence of acidosis. It may act, as Dr. Pfeiffer brought out; it may be, on the other hand, alkalosis, and if you administer sodium bicarbonate and get the carbon dioxide up to where chemically it is correct, you have only added to the alkalosis and masked one very good sign you have to show how your patient is actually progressing.

DR. B. S. VALLETT (Wilmington): I want to add a word about edema. There seems to be a little turning around in that respect too. Dr. Newburg, in the last issue of the *American Medical Journal,* says something about edema. He feels we are wrong in withholding water. In other words, he has shown cases that have excreted more water by giving water; patients with edema that have been allowed water have been able to excrete or get rid of edema, whereas if water is withheld the edema still persits.

PRESIDENT NILES: Is there any other discussion of this paper? If not, Dr. Pfeiffer will you close the discussion?

DR. PFEIFFER: Of the medical men I think the pediatricians have become most conscious of this matter of water balance, for the child's water balance is upset much more readily than the adult's. We owe a great deal to the pediatricians for what we know on the subject.

In regard to Dr. Tomlinson's interesting case, it would seem to me that the interpretation of that is this: primarily there was dehydration, with failure of elimination of the metabolic acids, so that the CO_2, which is in reality an indicator of acid, shows acid in excess, although at the same time this man had hypochloremia due to vomiting, and you did the things indicated in both instances. You gave him alkali to neutralize his abnormal acids, but at the same time you were giving him chlorine. It is somewhat the same as the case of gall bladder disease which I mentioned. In that case you noticed that acid was present the next day, and the CO_2 was a little low.

There are a good many variations in watch-

ing a curve in chemical imbalance, so that we must not have any rule of thumb, and that is the point I have tried to make, that by clinical examination you cannot be sure. You must have available a laboratory to give you the exact data, for only in that way can you overcome the imbalance.

1822 Pine Street.

CANCER OF THE LARYNX, DIAGNOSIS AND SURGICAL CURE*

GABRIEL TUCKER, M. D.**
Philadelphia, Pa.

IMPORTANCE OF THE SUBJECT TO THE GENERAL PRACTITIONER

Cancer of the larynx if diagnosed early can be cured in over eighty per cent of the cases when it occurs within the larynx and on the vocal cord. In an analysis of two hundred consecutive cases it was found that 144 or 72 per cent of the cases of cancer of the larynx originated inside the larynx. When the patients were seen many of them were inoperable because of the extension of the disease. Probably every one of these 144 patients could have been cure by surgery if the cancer had been recognized and properly treated at its beginning. Laryngologists are very familiar with these facts and at every opportunity they should be presented before the general profession. In order to make early diagnosis the physician must realize that the early symptoms of cancer of the larynx are the same as the symptoms of benign lesions.

EARLY SYMPTOMS

The symptoms which will lead the patient to consult the physician are hoarseness or a local discomfort referred to the region of the larynx. In every patient between 18 years and 80 years of age who comes complaining of either hoarseness or local discomfort in the larynx or both, the possibility of beginning cancer should be uppermost in the mind of the physician and every effort should be made by careful examination to exclude this possibility. If this is done cancer of the larynx will be recognized in its beginning and surgery will cure the great majority of the cases. The laity should be educated also as to this possibility so that they will come to the physician for examination. Nearly every case of cancer of the larynx gives a history of having been treated for chronic laryngitis for some time before it was realized that the patient had cancer of the larynx.

ETIOLOGY

Etiological factors in the development of cancer of the larynx are the same as those in any location in the body. The trauma of vocal abuse is apparently frequently an exciting cause. The use of tobacco and alcohol are also factors in the development of cancer of the larynx. Benign lesions of the larynx may become cancer. Possibly a factor in this change from the so-called precancerous lesions to cancer is the local irritation produced by the mass of the local lesion during phonation. Males are more frequently affected by cancer of the larynx than females, the proportion being about 10 to 1. The age at which cancer is most frequently discovered is between 40 and 50 although cancer has been reported in individuals as young as 16 years of age and as old as 90. Roughly speaking then we may say that any individual between 18 and 80 years of age is a subject for the exclusion of cancer if they present chronic hoarseness or have a definite sensation of local discomfort in the larynx.

LATE SYMPTOMS OF CANCER

As the lesion in the larynx extends and interferes with the vocal mechanism, hoarseness may become complete aphonia, dyspnea may develop from obstruction to the airway, difficulty and pain on swallowing and referred pain to the ear may be present. By the time these symptoms have developed there usually can be found evidence of extension to the regional glands in the neck. Cancer may exist in the larynx from six months to a year and a half and possibly longer if the lesion originates on the true cords without extension to the glands. In other portions of the larynx the extension to the regional glands is much more rapid.

DIAGNOSIS

The first step in the exclusion of cancer of the larynx is careful examination and study

* Read before the Medical Society of Delaware, Wilmington, October 8, 1935.

** Professor of Bronchoscopy and Laryngeal Surgery Graduate School of Medicine, University of Pennsylvania; Professor of Clinical Bronchoscopy and Esophagoscopy School of Medicine, University of Pennsylvania.

of the larynx with a mirror. Routine medical examination includes x-ray examination of the neck and chest, serological studies should be carefully carried out at this time. These examinations will help to show the relation of the laryngeal condition to other general or local disease. If the larynx cannot be satisfactorily examined with a mirror every portion can be inspected by means of the direct laryngoscope. The final step should be histologic examination of tissue removed from the lesion. This will serve also as a means of differential diagnosis. The removal of tissue for biopsy in the larynx where a suspicious lesion exists should be done in every case. Properly performed biopsy will not injure the structures of the larynx, will not cause rapid dessemination of the cancerous lesion and will not produce malignant change in a non-cancerous lesion. If cancer is found a histologic report on a fixed specimen of tissue can be obtained within 48 hours and immediate surgical treatment proceeded with.

TREATMENT

The treatment of cancer of the larynx is surgical removal of the cancer. The excision must include the entire lesion and sufficient of the surrounding tissue to be certain that the operative procedure goes well beyond the extension of the growth. In certain portions of the larynx the removal of a vocal cord is all that is required. In other locations the removal of the entire larynx may be required.

LARYNGOFISSURE

When the lesion involves the anterior portion of the true vocal cords, the anterior commissure, the immediate subglottic larynx, excision can be carried out by the technic of laryngofissure. The technic generally used is that devised by Chevalier Jackson or that of Sir Sinclair Thomson. Minor modifications are employed in the hands of various operators. The procedure is carried out under local anesthesia, requires hospitalization of the patient from ten days to three weeks and a very close follow-up observation of the patient for at least a year. The procedure will cure at least over 80 per cent of anterior intrinsic growths and saves the patient's larynx as well as his life. The close follow-up in these cases is emphasized for two reasons. First, to observe the development of the new vocal cord which will form and aid and advise the patient in the development of a good voice. Second, to detect recurrence early so that further operative procedure can be carried out. The removal of granulation tissue by direct laryngoscopy is at times a great help in this regard and is done without a serious inconvenience or discomfort to the patient. These patients have a whispered voice immediately following the operation, and the majority of them develop an excellent voice. The end result after laryngofissure, if the proper technic is followed, will depend on the extent of the excision that was required to remove the cancer from the larynx. The patients who require the removal of both vocal cords will not develop as good a voice as those who only require the removal of one cord. In all cases, however, the other functions of the larynx are completely restored.

TOTAL LARYNGECTOMY

In cases of cancer of the larynx where complete excision of the growth cannot be done by laryngofissure total laryngectomy is the procedure of choice. The one stage technic of MacKenty is probably the procedure most frequently employed. The two stage operation, the preliminary tracheotomy is indicated in all cases where there is dyspnea due to obstruction of the airway by the growth. The procedure is carried out with the avertin and local anesthesia quite satisfactorily. The results are excellent if the cancer is still within the larynx. Many patients develop an excellent buccal voice, all of them can be taught to use an artificial larynx successfully.

CONCLUSIONS

Cancer of the larynx can be cured by surgical treatment in over 80 per cent of the cases in certain types.

The early symptoms of cancer of the larynx are hoarseness and local discomfort.

The general practitioner should understand that hoarseness may mean cancer, and he should help to educate the public to the fact that cancer of the larynx can be cured by surgery.

326 South Nineteenth Street.

DISCUSSION

PRESIDENT NILES: You have all heard this most interesting paper. I would like to hear a discussion.

DR. A. J. STRIKOL (Wilmington): There is no question but that Dr. Tucker has presented this subject in a very excellent way.

I wish to emphasize the viewpoint that not only the public but the medical profession should be made hoarseness conscious, just as Dr. Bloodgood and his co-workers have made us breast-tumor or lump conscious. In the early stages, as Dr. Tucker has shown us, we have almost eighty or ninety per cent cures, while it is intrinsic.

It is not very difficult to diagnose if it can be seen, especially if a biopsy is made. But when a patient is having hoarseness over a period of four or five or six weeks, I think the general man should consult a doctor who is specializing in nose and throat work and rule out the possibility of cancer. There are four things especially we think of in connection with chronic hoarseness. One is syphilis, the second is tuberculosis, the third is cancer, and the fourth is pachyderma. Those are the four most common. Of course there are other diseases, but these are the most common causes of a chronic hoarseness. As I said before, a biopsy and a direct laryngoscope are necessary if you don't succeed in visualizing by an indirect with a mirror, it is fairly easy with a direct laryngoscope using the Jackson or Haslinger instrument.

It is curable. It is possibly one region where the success is greater in curing cancer than in any other part of the body.

PRESIDENT NILES: Is there any other discussion? If not, I might say at this point that I have been so thoroughly impressed by the findings and by the importance of a diagnosis of these conditions that I feel it is very sad indeed that Dr. Tucker could not examine a great number of the members of this Society, because if talking is one of the cardinal causes of cancer of the larynx I am sure he would find a number of those cases in this Society.

I will now ask Dr. Tucker to close the discussion.

DR. TUCKER: I have nothing to add. I want to express my thanks for the discussion and my thanks to the Society for the privilege of being here.

WOMAN'S AUXILARY: A. M. A.

History teaches us this great lesson—that there is a goal in all human affairs. As we pause to glance back over the fourteen years of our Medical Auxiliary history, we find that our goal is even greater than our founders visualized.

Like other great movements, our nation was being prepared for our coming. With the advent of the automobile, our country began to unfold itself. The doctor, who had long realized his limitations, found that now he was able to go forth and seek the knowledge he desired. With him on this great adventure, he took his wife, who had also dedicated her life to the practice of medicine. At his meetings the doctor found the knowledge which he was seeking, but the wife untrained in leisure soon tired of her aimless trips. She gained much from her contacts with other doctor's wives, and after talking with them she realized that there were many things that a doctor's wife might do to help his profession. So, our great American Medical Auxiliary was conceived. First, as a county auxiliary, then a state auxiliary, and finally a national organization.

We find that in several states, the county auxiliary had been discussed, but our records show that Texas had one of the first known Auxiliaries to an organized county medical society. In the Texas State Medical Journal, in 1919, we find the signed birth certificate of the Medical Auxiliary to the Texas State Medical Society. In St. Louis, in 1922, Mrs. Samuel Clark Red, who was then completing her two-year term as state president, appeared before the House of Delegates of the American Medical Association, and requested that body to accept a motion for the formation of a Woman's Auxiliary to the American Medical Association. This request was granted. Thus was laid the foundation of the American Medical Auxiliary, and upon this foundation each of our succeeding presidents have given to the Auxiliary added strength, and nourishment, for its growth.

It is with pride in their achievements that we name our past presidents: Mesdames Samuel Clark Red (three terms), Seale Harris, Franklin P. Gengenbach, John O. McReynolds, Allen H. Bunce, George H. Hoxie, J.

Newton Hunsberger, Arthur B. McGlothlan, Walter J. Freeman (deceased), James F. Percy, James Blake, Robert W. Tomlinson.

At the close of the first annual convention of the Auxiliary in San Francisco, 1923, Mrs. W. A. Wood, first National Recording Secretary and President of the Texas State Auxiliary, presented the organization with a gavel made from the Texas Oleander Tree. In presenting the gavel, Mrs. Wood gave an original poem, from which we quote the following lines:

As when the sea-shell pressed to the ear—
Gives forth the sea song we so long to hear,
So may this gavel in our President's hand
Give up sweet strains of our loved "Texas Land."

Sing soft to our women—North, South, East or West—
Of the "Lone State of Texas" that loved us best
For she gave of her "Spirit" on our natal day
In the land of Missouri—that glad morn in May.

* * * * * * *

You grew by her waters—were kissed by her spray
Waved in her breezes—day after day—
You're brim full o' memories of your dear Texas land
And you're fit to be Queen of our A. M. A. Band.

To Mrs. S. C. Red, the doctors and their wives owe a great debt; for during the early days, we find that it was her courage, wisdom and vision that kept ever before us—our Goal.

Mrs. William Hibbitts,
National Historian.

DELAWARE ACADEMY OF MEDICINE

The Delaware Academy of Medicine participated in the second annual Delaware Art Week, May 3 to 10, 1936, by displaying in the library an exhibit showing "Art As Applied to Medicine."

In connection with this subject a few excerpts from Dr. Henry E. Segrist's recent paper on "The Historical Aspect of Art and Medicine" (Bull. Inst. Hist. Med., Johns Hopkins Univ., April, 1936) are apropos:

"Art and medicine—they are both aspects of human civilization and yet it would be difficult to imagine two more different fields of human activity....However, as soon as we approach these two fields historically, we will find that the historian of art and the historian of medicine have a great deal in common.... In other words the medical historian can help the historian of art in interpreting the subjects of quite a few works of art....and there can be no doubt that pictures, artistic representations of any kind, can add a great deal to our knowledge of medical history. They illustrate the texts, supplement them and, in quite a few cases, pictures are the only sources that we have....

"It was recognized very early that illustrations can add to the clarity of medical and scientific books....But quite apart from such illustrations that were to serve a definite medical purpose, it is obvious that other artistic documents that were created without any thought of medicine can be important sources to us through the subject they happen to represent....

"Diseased organisms have been represented very often by artists....the pathos of certain diseases appealed to the artists;...there is comedy, burlesque even in some other pictures. Whenever a satirical artist wanted to ridicule a medical subject, he pictured a dental or a gouty patient....

"Works of art also contribute to our knowledge of the physician's doings. We naturally have to consult literary sources to know what a physician's therapy was but pictures show us the physician himself, the way he dressed, the way he acted. They reproduce the whole atmosphere of the doctor's office in various times....Doctor and patient are a popular subject with them (the Dutch painters) and have been represented endless times naively, maliciously, with a touch of irony and always very realistically...."

At the request of physicians and dentists reference material has been collected recently on the following subjects: The duties of a public health officer, Pelvic inflammatory dis-

ease, Intra-spinal injections for the relief of pain, Vincent's angina, Diabetes in children, Palliative treatment of cancer of the stomach, Open bite malocclusion, Trichinosis and the Treatment of purpura haemorrghica.

The reference service given in this library is worthy of mention, since this is a field omitted in many of the larger libraries, the readers being required to gather all their own references. Any physician or dentist wishing to read on a special subject need only telephone the library and the references will be collected and made ready for his use at the time desired.

It should be noted that journals may be borrowed from the library for one week and books for two weeks, subject to a renewal of that period in case they have not been called for by another.

Milk Deliveries and Floods

A noteworthy contribution to public health during the recent flood emergency was the efficient and often extraordinary maintenance of deliveries of pure milk under the most adverse conditions. Reports from health officials and medical authorities in the flood-stricken regions state that in practically all instances pasteurized fresh milk was delivered to persons while they were still unable to evacuate their homes in the flooded areas.

In the Pittsburgh area milk deliveries were made in power boats, row boats, canoes, flat boats and all manner of water craft. All milk was pasteurized and when lights failed, work in the plants proceeded by candle light with executives manning equipment along with the plant forces, and office staffs turned into helpers. In spite of the force with which the flood swept into Pittsburgh the trained distributors of milk met all requirements of state and city boards of health.

In New England airplanes were used to fly spare parts of pasteurization equipment to places out of the flood zone where milk could be prepared for use of flood victims. In Connecticut the Hartford milk plants were put out of commission by failure of power, but milk plants in unaffected areas pasteurized ample supplies of milk which were taken into Hartford by trucks carrying row boats, through roundabout ways. In one case trucks had to travel a round trip of 250 miles to get milk to East Hartford by avoiding flood waters, a trip that in normal times is only six miles.

Dr. Ray P. Moyer, Director of Health of Pittsburgh, stated:

"The dairy companies operating and distributing fluid milk in Pittsburgh and the surrounding area stricken by the disastrous flood are deserving of commendation for the manner in which they met the emergency and continued delivery of pure, pasteurized milk.

"Laboring under the handicaps of power, water and telephone curtailment and with heavy snow putting the milk supply trucks coming to the city under discouraging difficulties and local delivery forced to lengthy detours by flooded streets and bridges the dairy companies kept up their supply to meet all needs.

"Upon action of the city health department utility service was made available to the dairies to care for the pasteurization of milk and at no time during the flood was other than pasteurized milk distributed to the public.

"Water service was completely shut off at various times in practically all sections, this, with the hazards of public health always imminent under such conditions and with hundreds of produce-laden freight cars under water, made an ample supply of pure, pasteurized milk doubly imperative. In addition to the normal needs there was great need for the homeless and destitute through Red Cross operations.

"The Pittsburgh district dairy companies carried on in an eminent manner with the full confidence of the health department which was taxed to the limit supervising other food supplies and with sanitation problems."

The efforts of members of the dairy industry during the floods have strikingly illustrated the great progress made in supplying clean and safe milk to consumers in this country and have amply justified the activities of public health and medical authorities in working with the dairy industry to safeguard our market milk supplies.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware. Issued about the twentieth of each month under the supervision of the Publication Committee.

W. EDWIN BIRD, M. D.....EDITOR
Du Pont Building, Wilmington, Del.

WILLIAM H. SPEER, M. D.....Associate Editor
917 Washington St., Wilmington, Del.

M. A. TARUMIANZ, M. D.....Associate Editor & Bus. Mgr.
Du Pont Building, Wilmington, Del.
Telephone, Wilmington, 4368

Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

The right is reserved to reject material submitted for either editorial or advertising columns. The Publication Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

VOL. VIII MAY, 1936 No. 5

PREPAID DOCTORING

Under the above caption there appeared in *Time*, for April 20, 1936, in the section devoted to "Medicine," a short article that seems to indicate that *Time*, as evidenced by its medical editor, is not particularly friendly to the medical profession, or at least to the A. M. A. Correspondence with *Time*, however, elicits the statement: "You may assure your readers that neither *Time* nor the editor of its Medicine department has any unfriendly feeling towards the A. M. A. It happens that our relations with the A. M. A. headquarters have long been decidedly cordial, and continue to be so." The article follows:

Prepaid Doctoring

Three Milwaukee doctors last week went through the unpleasant experience of being ejected from their county organization, for a violation of professional ethics. Their sin: They took fees ($1 per month) from well people in return for which they promised to treat their illnesses if and when.

The American Medical Association has developed an acute case of nervous indigestion ever since depression knocked doctors off their economic feet. Few of the 200 and more schemes which doctors have invented to earn an honest dollar have set well with A. M. A. None has proved more revolting to that potent national body than the repayment plan which Milwaukee's Drs. John Edward Rueth, 46, Adam Lee Curtin, 49, and Herbert Carl Dallwig, 45, recently instituted.

The Milwaukee scheme is essentially the same as that profitably developed by Drs. Donald Edison Ross and Harry Clifford Loos in Los Angeles, Charles Dudley Saul in Philadelphia.

For $2 a month, paid in advance, clients of the Ross-Loos Clinic get any kind of doctoring or surgery they may require. This looks very much like the turnip of medical insurance and the beet of corporate medical practice, both of which nauseate the A. M. A. When Drs. Ross and Loos acquired 40,000 clients and a staff of 50 doctors, the A. M. A. expelled them. Subsequently lawyers forced the A. M. A. to take Drs. Ross and Loos back into the fold, on the technicality of an unfair trial.

The A. M. A. could not expel Dr. Saul because that rich homeopath is not a member. But A. M. A. members could try to prevent him from operating his Philadelphia prepaid medical service by having him cited as an unlicensed operator of an insurance scheme. Dr. Saul retaliated by having his two brothers, both potent Philadelphia lawyers, tweak the A. M. A. nose where it stuck into Pennsylvania business.

In Milwaukee Drs. Rueth, Curtin and Dallwig, expelled from the A. M. A. last week, hired a lawyer who bravely shouted: "They will resort to every means at their disposal to protect their standing as ethical pracitioners."

The eighty-seventh annual session of the American Medical Association will be held in Kansas City, Missouri, May 11-15, 1936. The House of Delegates will convene at 10 a. m.,

Monday, May 11, at the Hotel Muehlebach, Delaware's only delegate being Dr. Charles E. Wagner, with Dr. Stanley Worden as alternate. All but two of the sections will be housed in the magnificent new $6,000,000 municipal auditorium, the main arena of which seats 15,000 persons, is completely air-conditioned, and is considered by engineers to have the finest lighting and acoustic properties of any similar auditorium in the country. The auxiliary theatres and committee rooms seat an additional 7,000 persons; the exhibition hall and foyers provide 150,000 square feet of space.

An unusually attractive scientific program has been provided, and the scientific and technical exhibits promise to surpass those of recent years. The hotels are excellent and large, but early registration is advised. The railroad charge will be one and one-third fare, on the certification plan.

CANCER RESEARCH

Fifteen years ago laboratory research in cancer had reached a point where it was known that cancer could be caused at any time; (1) by repeated applications of tar to the skin of the mouse, (2) by transplantation of cancer cells from one animal to another of the same species, (3) by breeding special lines of mice that inherit a tendency to special cancer, and (4) by inoculating fowl with cell free filtrates of the Rous sarcoma. Clinically, of course, other irritants and conditions were known factors in cancer such, for example, as the overuse of tobacco, repeated sunburns and radium and x-ray. The lines of research developing from the four experimental facts given above have developed an amazing and interesting group of data, but for the most part these lines have tended to keep themselves distinct from each other. The studies of tar have culminated in brilliant researches begun in London and continued elsewhere and have led to the isolation of many pure chemicals such as dibenzanthracene, that are carcinogenic. The transplantation experiments have made progress, but it has not been so striking. The heredity experiments, especially those of Little and his co-workers, have put this experimental tool on a relatively firm footing. The filtrable virus experiments have been very difficult to understand or explain when compared with the other lines of cancer research.

Now there comes a report from the London Cancer Research group headed by Kennaway and confirmed in Philadelphia that pulls together three of these lines of research into an extraordinary synthesis that opens up great hopes for the future. These workers, in brief, have found that a cancer may be initiated by dibenzanthracene. It may then be transplanted serially through ten different animals thereby diluting the original irritant injected to a point certainly greater than one to one billion, of its original concentration and well below any level that could be identified chemically. At this point they then produce an ultrafiltered extract of the tumor and find that this extract has the power of initiating the same kind of cancer when injected into a new host. This brilliant experiment means that we must postulate that at some time in the course of the growth of cancer a new product is formed by the cancer which is of a size smaller than the size of the smallest visible bacteria and infinitely smaller than the size of a cancer cell, and which may or may not be a living virus which has the property of reproducing in a new host the cancer from which it was derived. This specific reproduction of a special kind of cancer puts it in a different class from the class of substances chemically isolated which produce cancer, but in the same class as the substance transmitting the Rous sarcoma of fowls. The irritant substances, such as the dibenzanthracene mentioned above, produce any kind of cancer of special cell type according to the cells on which they act. They may be either sarcomas, carcinomas, or leukemias according to circumstances.

The development of these lines of research to the point where knowledge is available that is useful in the prevention of human cancer has not yet been reached to an important degree, but with these experimental tools this knowledge may develop almost before we realize it. One would not have to be particularly sanguine to say that actually now the promised land in this field of endeavor is in sight and we have only a few more rivers to cross.

Editorial: *N. E. J. of M.*, April 30, 1936.

MISCELLANEOUS

Scientific Discoveries and Patents

The problem of medical patents has been agitating the medical profession increasingly in recent years. The "Principles of Medical Ethics" says quite plainly "It is unprofessional to receive remuneration from patents for surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances, or perquisites from attendants who aid in the care of patients."

Through the centuries, medicine has given freely of its discoveries for the benefit of mankind. Vaccination against smallpox, inoculation against hydrophobia, digitalis, and innumerable other methods and medicaments became the property of all who cared to employ them in the control of disease. Now, as medicine has become more complex, involving technical assistants in the fields of biochemistry, physiology, physics and associated branches, great numbers of people who give their full time to the work of the hospital, the laboratory or the care of the sick work with the medical profession but are not bound by the same ethical principles. Moreover, the universities have developed preparations and technics in their laboratories at considerable expense to the institution, and workers have seen fit to turn over to the universities the control of such products. Thus insulin is controlled by the governors of the University of Toronto; scarlet fever preparations are controlled by the Scarlet Fever Committee, Inc.; vitamin D preparations by the Wisconsin Alumni Research Foundation of the University of Wisconsin; the Sperti patents by the University of Cincinnati; the Zucker patents by Columbia University; the Doisy patents are controlled by the St. Louis University School of Medicine, and several patents are the property of Stanford University and the University of California.

The American Association for the Advancement of Science published in 1934 a report on this subject with the arguments for and against commercialization of university patents. The problem continues to be studied by the National Research Council and by many other bodies. The question is one that has concerned the House of Delegates of the American Medical Association, and the Board of Trustees even now is engaged in a survey of the situation.

In the current issue of *Harpers Magazine,* George W. Gray presents an interesting analysis of the present status of affairs as it concerns problems not only in the medical field but in science generally. He points out that separate patent-holding agencies were operating at the beginning of 1936 at the Universities of Cincinnati, Columbia, Cornell, Iowa State College, Lehigh, Pennsylvania State College, Purdue, Rutgers, Utah, Wisconsin, and Wittenberg College. Moreover, the state universities of Illinois and Minnesota, the California and Massachusetts Institutes of Technology, and the Franklin Institute of Philadelphia control either directly or by a committee patents contributed by research workers.

There seem to be three contrasting methods of financial control of university patents: (1) the method of the general holding company, (2) the method of the university holding company, and (3) the direct or committee method. Apparently these methods were established with the chief objective of protecting the public against substitutes and makeshifts. By means of the patent, the inventor can insure that whatever is offered to the public under his invention is technically right.

Mr. Gray feels that, when a new device involves the purity of a process or of ingredients, the public interest is best served by patenting. However, service of the public interest by insuring purity and quality of preparations is far different from commercial exploitation of the fruits of university research.

One of the most cogent arguments now advanced concerns the relationship of a university or research institution to taxation. Endowed universities and research institutions are usually exempt from taxation. They are non-profit institutions. As an endowed institution, free from taxation, such institutions owe a definite duty to the public, which bears the burden of taxation. This is certainly a practical consideration which may well en-

gage the authorities in the universities responsible for administration of commercially valuable patents.

Again, the exploitation of patents by various universities places them in direct competition with one another, as, for example, the three patents concerned with the development of vitamin D. Under such circumstances the results of current research are jealously guarded and all research probably delayed through failure of research workers to communicate with one another. Indeed, even workers in the same university develop a competitive spirit likely to destroy entirely the type of co-operation in science which is responsible for much of our current progress. This conception of scientific research is beautifully expressed by Mr. Gray in the following paragraph:

"Scientific research, as a recognized full-time occupation, is one of the youngest of the professions. It has come up out of the basements and garrets of the early experimenters, and has attained status among the most honored of the callings of man. Perhaps the laboratory is pressed with economic necessity—but is that warrant for changing its charter? Possibly it can support itself handsomely and independently—but can it survive the shiftings of bases and the readjustments of outlook which commercialization entails? One of its greatest glories is its intellectual integrity and independence—but can this reputation continue unsullied in the clash of competitive sales campaigns of patented commodities, infringement suits, and other contentions of the marketplace in which the financial interest of the research institution is on one side of the dispute?"

A final consideration concerns the rights of the physician. When our civilization was such as to safeguard the physician, considering him as one who gave freely of his knowledge and service to mankind and therefore entitled to special consideration, physicians might well offer freely their time, their service, their original contributions. Our complex civilization of today places ever new burdens on a willing bearer of mankind's tribulations. Surely there was never a problem more complex offered for solution by the best minds of the medical profession.—*Jour. A. M. A.*, April 18, 1936.

PROPAGANDA FOR REFORM

The Tryparsamide Patent and Trademark.—The Council on Pharmacy and Chemistry reports that tryparsamide is an arsenical preparation originally proposed for treatment of trypanosomiasis but now used as well in certain cases of syphilis of the central nervous system. The product is at present manufactured and marketed by Merck & Co., Inc., under U. S. patents and trademark registration by license from the Rockefeller Institute for Medical Research, which owns both the patents and the trademark. It was accepted by the Council for inclusion in New and Nonofficial Remedies in 1925. The justification for patenting a worthwhile medical preparation lies in the opportunity this procedure affords of controlling the quality and purity of the preparation involved for the purpose of protecting the public from the marketing of specious or impure products. This is particularly true of a drug such as Tryparsamide, which requires unusual care in its preparation to insure that degree of purity which is essential for proper use. The patent on tryparsamide expired September 24, 1935. On October 8, 1935, the secretary inquired of the Rockefeller Institute whether it intended to dedicate the name Tryparsamide to the public as a non-proprietary designation on the expiration of the patents. The institute informed the secretary that it not only planned to dedicate the name to the public as a non-proprietary designation but had already taken steps to that end both in the United States and in numerous foreign countries. The Council, therefore, adopted Tryparsamide as a non-proprietary name for the product which has been marketed under that name as a proprietary designation. (*J. A. M. A.*, March 7, 1936, p. 781).

Felton's Serum and Diathermy in Pneumonia.—Physicians who have the largest experience in the management of the pneumonias regularly use refined and concentrated serums in the treatment of those pneu-

monias for which serums are available. Physicians with less experience and opportunity for observation of the pneumonias are more frequently using serum in the treatment of pneumonia whenever they have been educated to do so by such intensive campaigns as have been undertaken in Massachusetts and New York. Physicians may refrain from the use of Felton's serum because of ignorance of its benefits, fear of untoward serum reactions, or mistaken motives of economy. Modern methods for differentiating and studying the pneumonias have changed the point of view concerning their treatment. Stress is now placed on specific treatment and prevention and cure for bacteremia, which is present in most fatal cases. Serum treatment requires knowledge and skill comparable to those necessary for surgical procedures. The prompt dramatic termination of the disease is a gratifying reward for effort. Immediate serum reactions are infrequent and with some lots they do not occur. Ophthalmic and skin tests for sensitivity should be made before giving serum. To a certain extent the amount of serum required depends on the earliness of administration. The cost for serum is frequently no more than the expense for operating room and dressings for patients suffering from appendicitis. Against the cost of the serum should be offset the reduced cost of nursing and of oxygen therapy, the shorter convalescence, the more rapid return to work, and the less frequent occurrence of complications.

John S. Coulter, in a recent review on medical diathermy (*The Journal A. M. A.*, January 18, p. 209), says: "In the management of pneumonia, medical diathermy does seem to be of definite benefit in reducing the severity of the thoracic pain. It is not an accepted specific treatment in lobar pneumonia." While oxygen is being administered diathermy should not be employed, because ignition of the bed clothes may occur from small sparks in the presence of oxygen-enriched air.—(*J. A. M. A.*, March 7, 1936, p. 872).

The New Ergot Alkaloid "Ergonovine."—The Council on Pharmacy and Chemistry reports that during the past year, communications from four laboratories have been published reporting the isolation of a new oxytocic alkaloid from ergot. Until recently there has been doubt as to whether or not the principles reported by these laboratories were identical (termed "Ergotocin," by Kharasch, "Ergometrine," by Dudley and Moir, "Ergobasine," by Stoll, and "Ergostetrine," by Thompson). In a joint signed statement (*Science*, February 28) these investigators say there is "no doubt that the alkaloid obtained in the four different laboratories was the same substance. . . ." Because it seemed impossible to establish undisputed priority, and because of possible conflict of the other names with the policy of the Council governing nomenclature, it was necessary that a suitable non-proprietary name which is not therapeutically suggestive be adopted for the new alkaloid. Not one of the several names proposed by the discoverers complies with the Council's requirements. The Council therefore determined to adopt the new non-proprietary name "Ergonovine" (ergo-novine). (*J. A. M. A.*, March 21, 1936, p. 1008).

Farastan or Mono-Iodo-Cinchophen.—In 1930 the Council on Pharmacy and Chemistry declared Farastan not acceptable for inclusion in New and Non-official Remedies because "it is an irrational preparation marketed with unwarranted therapeutic claims." At that time Farastan was claimed to be mono-iodo-cinchophen, a "new chemical complex" containing approximately 33.6 per cent of iodine. The U. S. Department of Agriculture, in a press release dated December 20, 1935, calls attention to the seizure of a shipment of "Farastan Mono-Iodo-Cinchophen Compound" because "the name was held to be false and misleading, since the article consisted almost entirely of cinchophen (97%)." This information is quite interesting in view of the manufacturer's oft-repeated claim that Farastan is a "synthetic compound of cinchophen and iodine" which is "more valuable than the older cinchophen products" because it is "more potent therapeutically and more easily tolerated." Those using cinchophen will prefer to employ products marketed under the pharmacopeial name with full knowledge of the potential dangers of this product and exploited without unwarranted and mislead-

ing claims. (*J. A. M. A.*, April 18, 1935, p. 1141).

Larostidin "Roche" Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that in the latter part of 1934 and in 1935 the medical profession was deluged with propaganda for "Unquestionably the most notable advance in the medical treatment of Gastric and Duodenal Ulcer," Larostidin "Roche." According to the advertising, this is a 4 per cent solution of *laevo*-histidine-monohydrochloride in an isotonic medium. The Council questioned some of the claims made by Hoffman-La Roche, Inc., and initiated a series of experiments to determine the usefulness of histidine hydrochloride and Larostidin "Roche" in treating gastric and duodenal ulcer as compared with the diet-alkali regimen. The results of this investigation are reported in *The Journal A. M. A.*, April 25, 1935, p. 1468 (Martin, K. A.: "Histidine versus Diet and Alkalis in Treatment of Peptic Ulcer"). The investigator reported that the symptomatic and radiologic response of forty-one patients in the injection series was not quite so good as that of the forty control patients in the diet-alkali series, in either the initial or the sustained effects. As a result of its consideration of the paper of Martin and others, however, the Council concluded that, although there is at present insufficient clinical evidence for its evaluation, histidine hydrochloride shows promise of possible usefulness in the treatment of gastric and duodenal ulcer. The Council declared Larostidin (Hoffman-La Roche, Inc.) not acceptable for New and Non-official Remedies because it is marketed with unwarranted therapeutic claims, and voted to postpone further consideration of histidine monohydrochloride until adequate clinical evidence of its therapeutic usefulness is available. (*J. A. M. A.*, April 25, 1936, p. 1473).

OBITUARY

JOSEPH P. WALES, M. D.

Dr. Joseph Patten Wales died of pneumonia on April 16, 1936, after having been ill for almost three weeks. He was 62 years old.

Dr. Wales was born in Wilmington, May 22, 1874, the son of Dr. and Mrs. John P. Wales. His father was once Mayor of Wilmington. A grandfather, John Wales, served as Secretary of State and as United States Senator and was one of the state's leading attorneys during the middle years of the last century. An uncle, Leonard E. Wales, was a judge in the Delaware courts and later served as judge in the United States District Court here. An ancestor, Major John Patten, served in the Continental army under George Washington.

He received his early education in the Friends School and was graduated from Yale University (Sheffield Scientific School) in 1894. He then took up the study of medicine at the University of Pennsylvania where he obtained his medical degree in 1898. Following a two-year interneship he began as a general practitioner in 1900, several years later entering the specialized field of children's diseases.

He was a former president of the Medical Society of Delaware and of the New Castle County Medical Society. He was a member of the American Medical Association, Delta Phi Fraternity, the Young Men's Republican Club, Society of Colonial Wars, Sons of the American Revolution, Philadelphia Pediatric Society. Dr. Wales was on the staff of the Delaware and Wilmington General Hospitals.

Dr. Wales in his youth was prominent in athletics. For several years he was the state tennis champion. He was a member of the Y. M. C. A. baseball and football teams in earlier years. His favorite sport in later life was golf. He was a member of the Old Delaware Field Club.

He was surgeon for the city police department from 1904 to 1934, except for a ten-year period from 1913 to 1923. In May, 1935, he was appointed a member of the board of directors of the Department of Public Safety by Mayor W. H. Speer to succeed Henry P. Scott, Jr. For several years he was a member of the state Board of Health and Federal pension examiner for this district.

Dr. Wales was the last survivor of the original founders of Brandywine Sanatorium which was established in 1903. The present

child health centers throughout Delaware are the outgrowth of his plan in 1916 to establish stations where milk could be obtained for deserving poor families at cost.

Dr. Wales married Miss Elizabeth B. Gilpin in 1903 by whom he is survived, as well as by two daughters, Mrs. Thomas J. Craven, of New York City, and Miss Elizabeth G. Wales of this city; a brother, Leonard E. Wales, judge of the Court of Common Pleas of New Castle County; two sisters, Miss Isabelle B. Wales and Miss Elizabeth B. Wales, and two grandchildren.

Funeral services were conducted at his late residence on April 18, 1936. The interment was private.

BOOK REVIEWS

The Single, the Engaged and the Married. By Maurice Chideckel, M. D., Pp. 269. Cloth. Price, $2.50. New York: Eugenics Publishing Company, 1936.

Chideckel's new book is not just another of the many on the sexual side of mankind; it is, in fact, one of the broadest in its class that we have yet seen. Written for the layman, it seems to the professional reviewer to be puerile in spots, yet the layman often needs repetition and emphasis, else he does not really grasp the idea. The style is serious yet entertaining; and the page is often punctuated with a sharp shaft of wit or a dart of subtle philosophy.

We do believe, however, that for a work for lay consumption too many drugs are mentioned—not that the patient would try to procure them without a prescription, but that the physician who did not prescribe them might be discounted in the patients' eyes, yet there is, among our leaders, no unanimity as to the therapeutics of progestin, folliculin, theelin, etc. Such controversial medicinals have no place in a lay manual.

However, this book is a most readable one and merits a wide circulation.

The Psychology of Love. By Paolo Mantegazza. Pp. 237. Cloth. Price, $3.00. New York: Eugenics Publishing Company, 1936.

Prof. Mantegazza's book first appeared in 1872, as the first part of a triology on love. The work created a storm of protest, for the intrepid Italian author was writing things that had never been printed before. But today, to the cognoscenti, Mantegazza's name and works are known and respected as only a great pioneer can be.

The present translation is by Herbert Alexander and preserves faithfully the almost lyrical style of the original. The physical and the psychic attributes of love are treated concurrently, as they should be. This is one of the great source-books of the modern science of sexology.

Bewildered Patient. By Marian S. Newcomer, M. D. Pp. 325. Cloth. Price, $1.75. Boston: Hale, Cushman and Flint, 1936.

This very sensible manual tells the layman what medicine has to offer, and how to procure it. It covers a wide range of subjects, of which the best chapters are those on "Choosing a Doctor" and "Alarming Accidents." The latest of medical science and the best of medical ethics are expounded in a most readable style. We predict a wide circle of readers for this book.

Synopsis of Clinical Laboratory Methods. By W. E. Bray, M. D., Professor of Clinical Pathology, University of Virginia. Pp. 324, with 43 illustrations. Cloth. Price, $3.75. St. Louis: C. V. Mosby Company, 1936.

This little manual is the most concise, complete and up-to-date laboratory guide the reviewer has had the opportunity to see. It covers the entire field of clinical laboratory work including urinalyses, clinical blood analyses, hematology, serology, bacteriology, parasitology, and a short summary of the more usual poisons from the laboratory standpoint. Many of the cuts are rather diagrammatic but they illustrate the text very clearly.

In the section devoted to urinalysis there is included a classification of the nephritides. This is always rather dangerous even in a complete work. Here, in a synopsis, such a classification not entirely acceptable to everyone, may possibly cause some confusion among medical technicians. In general, however, the author has been very careful to present only generally acceptable data. In several instances, where certain advances in medicine have been so recent that general acceptance has not yet been possible, the reader is given references for the opinion stated. This synopsis of laboratory methods should prove most useful to clinical laboratory technicians.

1789—MEDICAL SOCIETY OF DELAWARE—1936

OFFICERS AND COMMITTEES FOR 1936

PRESIDENT: Joseph B. Waples, Georgetown

FIRST VICE-PRESIDENT: Meredith I. Samuel, Wilmington
SECOND VICE-PRESIDENT: C. G. Harmonson, Smyrna

SECRETARY: William H. Speer, Wilmington
TREASURER: A. Leon Heck, Wilmington

COUNCILORS

James Martin, Magnolia
Bruce Barnes, Seaford
J. D. Niles, Townsend

AMERICAN MEDICAL ASSOCIATION

DELEGATE: Charles E. Wagner, Wilmington
ALTERNATE: Stanley Worden, Dover

STANDING COMMITTEES

COMMITTEE ON SCIENTIFIC WORK

James Beebe, Lewes
W. T. Chipman, Harrington
W. H. Speer, Wilmington

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

I. J. MacCollum, Wyoming
Wm. Marshall, Milford
J. H. Mullin, Wilmington
J. B. Waples, Georgetown
W. H. Speer, Wilmington

COMMITTEE ON PUBLICATION

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
W. H. Speer, Wilmington

COMMITTEE ON MEDICAL EDUCATION

E. R. Mayerberg, Wilmington
Wm. Marshall, Milford
K. J. Hocker, Millville

COMMITTEE ON HOSPITALS

R. C. Beebe, Lewes
L. J. Jones, Wilmington
Stanley Worden, Dover

COMMITTEE ON NECROLOGY

E. R. Steele, Dover
G. B. Pearson, Newark
R. B. Hopkins, Milton

SPECIAL COMMITTEES

COMMITTEE ON CANCER

G. C. McElfatrick, Wilmington
B. M. Allen, Wilmington
Lewis Booker, New Castle
G. W. K. Forrest, Wilmington
E. H. Lenderman, Wilmington
I. J. MacCollum, Wyoming
S. M. Marshall, Milford
J. R. Elliott, Laurel
E. L. Stambaugh, Lewes

COMMITTEE ON MEDICAL ECONOMICS

H. L. Springer, Wilmington
W. E. Bird, Wilmington
I. M. Flinn, Wilmington
W. H. Speer, Wilmington
A. J. Strikol, Wilmington
O. V. James, Milford
J. S. McDaniel, Dover
W. T. Jones, Georgetown
A. C. Smoot, Georgetown

COMMITTEE ON TUBERCULOSIS

J. P. Wales, Wilmington
J. M. Barsky, Wilmington
L. D. Phillips, Marshallton
M. I. Samuel, Wilmington
R. W. Tomlinson, Wilmington
W. C. Deakyne, Smyrna
W. T. Chipman, Harrington
H. M. Manning, Seaford
James Marvil, Laurel

COMMITTEE ON SYPHILIS

B. S. Vallett, Wilmington
I. L. Chipman, Wilmington
N. R. Washburn, Milford

COMMITTEE ON CRIMINOLOGIC INSTITUTES

M. A. Tarumianz, Farnhurst
T. H. Davies, Wilmington
H. V. P. Wilson, Dover

REPRESENTATIVE TO THE DELAWARE ACADEMY OF MEDICINE

W. O. LaMotte, Wilmington

ADVISORY COMMITTEE, WOMAN'S AUXILIARY

P. R. Smith, Wilmington
C. J. Prickett, Smyrna
C. B. Scull, Dover
Catherine Gray, Bridgeville
U. W. Hocker, Lewes

WOMAN'S AUXILIARY

MRS. LAURENCE J. JONES, *President*, Wilmington

MRS. W. E. SMITH, *Vice-Pres. for New Castle County*, Wilm.
MRS. I. W. MAYERBERG, *Vice-Pres. for Kent County*, Dover
MRS. E. L. STAMBAUGH, *Vice-Pres. for Sussex County*, Lewes

MRS. IRA BURNS, *Recording Secretary*, Wilmington
MRS. S. W. RENNIE, *Corresponding Secretary*, Wilmington
MRS. W. F. PRESTON, *Treasurer*, Wilmington

NEW CASTLE COUNTY MEDICAL SOCIETY—1936

Meets the Third Tuesday

J. H. MULLIN, *President*, Wilmington.

C. C. NEESE, *Vice-President*, Wilmington.

ROGER MURRAY, *Secretary*, Wilmington.

N. W. VOSS, *Treasurer*, Wilmington.

Delegates: W. E. Bird, J. W. Butler, I. L. Chipman, D. T. Davidson, I. M. Flinn, A. L. Heck, L. J. Jones, J. H. Mullin, Roger Murray, L. S. Parsons, L. J. Rigney, Grace Swinborne, R. W. Tomlinson, J. P. Wales.

Alternates: B. M. Allen, L. W. Anderson, Earl Bell, Ira Burns, H. L. Heitefuss, J. S. Keyser, R. T. LaRue, G. C. McElfatrick, E. R. Miller, L. D. Phillips, J. A. Shapiro, A. J. Strikol, B. S. Vallett, C. E. Wagner.

Board of Directors: I. Lewis Chipman, C. P. White, J. M. Barsky, J. H. Mullin, Roger Murray.

Board of Censors: E. H. Lenderman, G. C. McElfatrick, W. V. Marshall.

Program Committee: C. C. Neese, J. H. Mullin, Roger Murray.

Legislation Committee: G. C. McElfatrick, J. H. Mullin, J. D. Niles.

Membership Committee: A. L. Heck, A. B. Gruver, Minna Sosnov.

Necrology Committee: R. R. Tybout, J. J. Cassidy, R. W. Tomlinson.

Nomination Committee: E. R. Mayerberg, D. T. Davidson, J. M. Barsky.

Audits Committee: Earl Bell, G. A. Beatty, W. W. Lattomus.

Public Relations Committee: E. R. Mayerberg, O. S. Allen, C. E. Wagner.

Medical Economics Committee: W. E. Bird, Ira Burns, W. H. Speer, A. J. Strikol, J. P. Wales.

KENT COUNTY MEDICAL SOCIETY—1936

Meets the First Wednesday

C. J. PRICKETT, *President*, Smyrna.

H. V. P. WILSON, *Vice-Pres.*, Dover.

A. V. GILLILAND, *Sec.-Treas.*, Smyrna.

Delegates: W. T. Chipman, Harrington; J. S. McDaniel, Dover; C. J. Prickett, Smyrna.

Censors: L. L. Fitchett, Felton; Stanley Worden, Dover; N. R. Washburn, Milford.

DELAWARE ACADEMY OF MEDICINE—1936

Open 10 A. M. to 5 P. M. and Meeting Evenings

LEWIS B. FLINN, *President*

CHARLES E. WAGNER, *First Vice-President.*

E. HARVEY LENDERMAN, *Second Vice-President*

JOHN H. MULLIN, *Secretary*

WILLIAM H. KRAEMER, *Treasurer*

Board of Directors: W. S. Carpenter, H. F. du Pont, C. M. A. Stine, A. H. Bailey, S. D. Townsend.

DELAWARE PHARMACEUTICAL SOCIETY—1936

G. W. BRITTINGHAM, *President*, Wilmington.

E. J. ELLIOTT, *1st Vice-Pres.*, Bridgeville.

F. E. BRERETON, *2nd Vice-Pres.*, Milford.

P. P. POTOCKI, *3rd Vice-Pres.*, Wilmington.

ALBERT BUNIN, *Secretary*, Wilmington.

ALBERT DOUGHERTY, *Treasurer*, Wilmington.

Board of Directors: H. P. Jones, Smyrna; T. S. Smith, Wilmington; W. L. Morgan, Wilmington; P. P. Potocki, Wilmington; G. W. Brittingham, Wilmington.

Legislative Committee: Thomas Donaldson, Wilmington, *Chairman.*

SUSSEX COUNTY MEDICAL SOCIETY—1936

Meets the First Thursday

A. C. SMOOT, *President*, Georgetown.
G. E. JAMES, *Vice-President*, Selbyville.
E. L. STAMBAUGH, *Secretary-Treasurer*, Lewes.

Delegates: G. Metzler, Jr., J. R. Elliott, G. M. Van Valkenburgh.

Alternates: Bruce Barnes, Howard Lecates, K. J. Hocker.

Censors: K. J. Hocker, U. W. Hocker, W. T. Jones.

Program Committee: Carlton Fooks, Floyd Hudson, G. V. Wood.

Nominating Commitee: Carlton Fooks, W. T. Jones, J. R. Elliott.

Historian: R. C. Beebe.

DELAWARE STATE BOARD OF HEALTH—1936

Stanley Worden, M. D., *President*, Dover; Mrs. F. G. Tallman, *Vice-President*, Wilmington; Mrs. Anna Brewington, *Secretary*, Delmar; R. E. Ellegood, M. D., Wilmington; Margaret I. Handy, M. D., Wilmington; Mrs. Charles Warner, Wilmington; J. Paul Wintrup, D. D. S., Wilmington; Arthur C. Jost, M. D., *Executive Secretary and Registrar of Vital Statistics*, Dover.

DELAWARE STATE DENTAL SOCIETY—1936

W. C. STEWART, JR., *President*, Wilmington.

W. R. STAATS, *Vice-President*, Wilmington.

R. R. WIER, *Secretary*, Wilmington.

P. A. TRAYNOR, *Treasurer*, Wilmington.

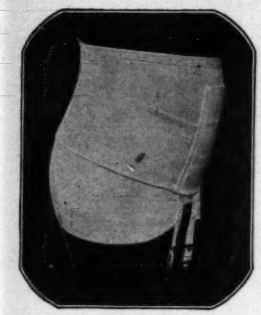
R. E. PRICE, *Librarian*, Wilmington.

Councilors: P. K. Musselman, Newark; Charles Cannon, Georgetown; Morris Greenstein, Wilmington.

Delegate to A. D. A.: P. A. Traynor, Wilmington. *Alternate*: Clyde Nelson, Milford.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter



Gives perfect uplift. Is worn with comfort and satisfaction. Made of Cotton, Linen or Silk. Washable as underwear. Three distinct types, many variations of each. Each belt is made to order.

The Picture Shows "Type N"

Storm belts adaptable to all conditions. Ptosis, Hernia, Pregnancy, Obesity, Sacro-Iliac Relaxations. High and Low Operations, etc.

Ask for Literature

KATHERINE L. STORM, M.D.

Originator, Owner and Maker

1701 Diamond St. Philadelphia

The

"PERFECT"

LOAF

By

Freihofer

For

Flavor

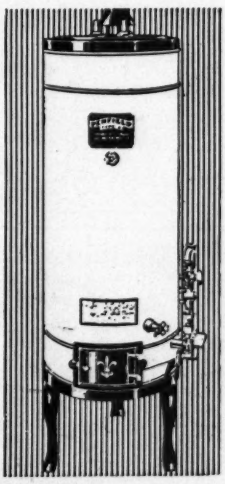
Texture

Nutrition

The Butter is Baked in The Loaf

Real Automatic Water Heating by GAS

Economical
Sure
Fast



10c a day will supply 50 gallons of Hot Water for less than the cost of a pack of cigarettes

DELAWARE POWER & LIGHT CO.

SINCE 1874

it has been our aim to have our goods represent greater value for the amount of money expended than can be supplied by any other house. Our connections and facilities enable us to supply the freshest of

FRUITS AND VEGETABLES

in Season and Out

GEORGE B. BOOKER COMPANY

102-104-106 East Fourth St.

Wilmington, Delaware

ICE SAVES
FOOD
FLAVOR
HEALTH

For a Few Cents a Day

SMITH & STREVIG, Inc.

WILMINGTON, DELAWARE

DISTRIBUTORS

Bay Surgical Dressings.
Eastman Duplitized X-Ray Films.
Eastman Dental X-Ray Films.
Johnson & Johnson Aseptic Dental Specialties.
Cook Carpules—Syringes.
Sherman Vaccines and Ampoules.
Squibb Vaccines and Arsenicals.
Searle Bismuth and Arsenicals.
Becton, Dickinson Luer Syringes and Thermometers.
Clapp's Baby Vegetable Foods.

PRICES ON APPLICATION

PROMPT DELIVERY

Delicious—Pure—Nutritious Year in and Year Out

SHARPLESS
"The Velvet Kind"
ICE CREAM

Garrett, Miller & Company

Electrical Supplies

Heating and Cooking Appliances

G. E. Motors

N. E. Cor. 4th & Orange Sts.

Wilmington - - - Delaware

For

Rent

Everything the Hospital may need in:

HARDWARE
CHINA WARE
ENAMEL WARE
ALUMINUM WARE
PAINTS
POLISHES
WASTE RECEPTACLES
JANITOR SUPPLIES
CUTLERY

Delaware Hardware Company

(*Hardware since* 1822)
2nd and Shipley Streets
Wilmington, Del.

For High Quality of Seafood:

Fresh-picked crab meat, shrimp, scallops, lobsters, fresh and salt water oysters.

All Kinds of Other Seafood
Wholesale and Retail

Wilmington Fish Market

705½ KING ST.

-- SALES AND SERVICE --
- o f -
QUALITY MERCHANDISE
Radios - Refrigerators
Washers - Cleaners
All Electrical Appliances
REBURN RADIO STORE, Inc.
"The-Store-Of-Servivce"
2929 MARKET ST. - PHONE 2-0951
WILMINGTON - DELAWARE

Flowers . . .
Geo. Carson Boyd
at 216 W. 10th Street
Phone: 4388

Not Just A Lumber Yard
but a source of supply for almost a n y construction or maintenance material.
"Know us yet?"
J. T. & L. E. ELIASON
INC.
Lumber—Building Materials
Phone New Castle 83
NEW CASTLE :-: DELAWARE

PARKE'S
Gold Camel
TEA BALLS
INDIVIDUAL SERVICE
"Every Cup a Treat"
L. H. PARKE COMPANY
Coffees Teas Spices
Canned Foods Flavoring Extracts
Philadelphia :-: :-: Pittsburgh

Blankets—Sheets—Spreads—
Linens—Cotton Goods
Rhoads & Company
Hospital Textile Specialists Since 1891
Manufacturers—Converters
Direct Mill Agents
Importers—Distributors
MAIN OFFICE
401 North Broad Street, Philadelphia, Pa.
MILLS
Philippi, W. Va.

Baynard Optical Company

Prescription Opticians

We Specialize in Making
Spectacles and Lenses
According to Eye Physician's
Prescriptions

5th and Market Sts.
Wilmington, Delaware

Plumbing, Heating
and Air Conditioning Equipment

SPEAKMAN COMPANY

Showers, Plumbing Fixtures and
Accessories for Hospitals and
Institutions

SALES AND DISPLAY ROOMS
816-822 Tatnall Street
Factory—30th and Spruce Streets
WILMINGTON DELAWARE
Telephone: 7261-7262-7263

Fraim's Dairies

Distributors of rich Grade "A" pasteurized Guernsey and Jersey milk testing about 4.80 in butter fat, and rich Grade "A" Raw Guernsey milk testing about 4.80. This milk comes from cows which are tuberculin and blood tested.

Try our Sunshine Vitamin "D" milk, testing about 4%, Cream Butter Milk, and other high grade dairy products.

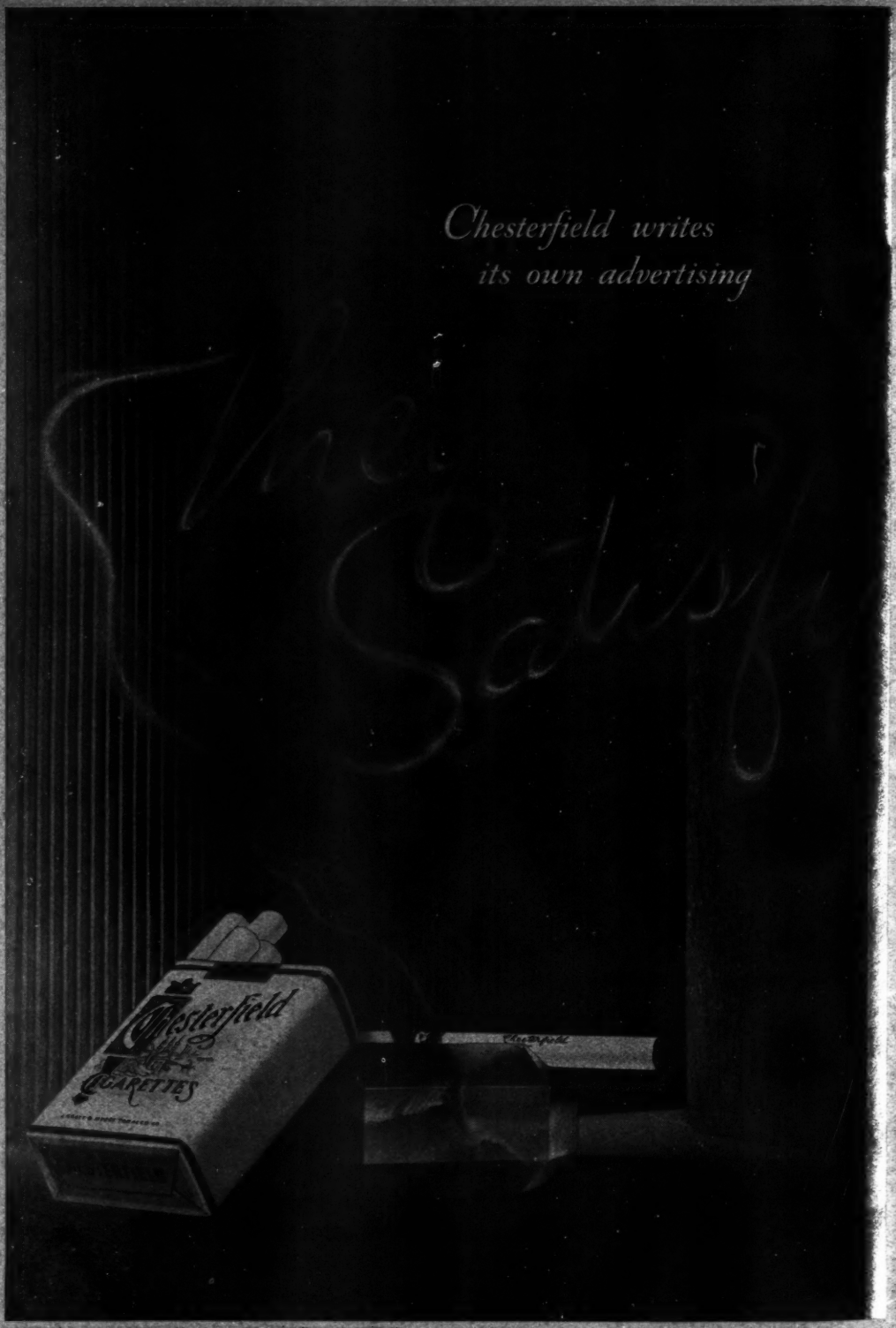
VANDEVER AVENUE &
LAMOTTE STREET
Wilmington, Delaware

NEWSPAPER And PERIODICAL PRINTING

An important branch
of our business is the
printing of all kinds
of weekly and monthly
papers and magazines

The Sunday Star

Printing Department
Established 1881



© 1936, Liggett & Myers Tobacco Co.